serves much more space, than so incomplete a notice would indicate; but it is only practicable here to give the briefest possible indication of its contents, and to advise everyone interested in the subjects treated to examine the work and judge it for himself. Mr. Kent and his publishers —who have put up the book in excellent shape in all respects—are to be heartily congratulated on the outcome of their long struggle with the most difficult task that authorship knows—the condensation of a a great mass of useful special information into manageable and compact form. The product of their efforts is a mechanical engineer's pocket-book covering the field with remarkable completeness, correct as to theory, rich in data, supplying all the tables, 'constants of nature,' and results of scientific research in its department, required by the practitioner, and in marvellously compact form.

In size, type, paper and presswork, binding and finish, the book is fully up to the established standard for such publications. It seems remarkably free from printers' and other errors—although it must undoubtedly fail of absolute perfection in this respect in a first edition—and is a credit to all concerned in its production. It is a great work well done.

R. H. THURSTON.

Birdcraft, a Field Book of Two Hundred Song, Game and Water Birds. By MABEL OSGOOD WRIGHT. Pp. 317. 15 double plates, mostly colored. New York and London, Macmillan & Co. 8°. May, 1895. Price, $3.00.

On opening Mrs. Wright's *Birdcraft*, fresh from the press, one is likely to exclaim 'what horrible pictures!' and wonder how a reputable publisher or author could permit such atrocious daubs to deface a well printed book. But in spite of these staring eyesores, which certainly prejudice one against the work, the text contains much of interest and, taken as a whole, is well written. The spirit of the book is in touch with the popular and growing fashion of studying birds in the field, and its chief purpose seems to be to interest the novice and aid in identifying birds 'in the bush.' It contains introductory chapters on 'the spring song,' 'the building of the nest,' 'water birds,' 'birds of autumn and winter,' and 'how to name the birds.' The book proper begins with a 'synopsis of bird families,' followed by popular descriptions and short biographies of 200 species—mostly well-known eastern birds—and ends with keys for the ready identification of males in spring plumage. The utility of such keys can be tested only by actual use. These are simple and look as if they would be helpful to the beginner, though it almost takes one's breath away to find the robin classed with the cardinal and tanager under 'birds conspicuously red.'

Most of the biographies are based on the author's field experience in southern Connecticut, and as a rule are interesting and accurate. Now and then misleading statements creep in, particularly with reference to the geographic ranges. For instance, the white-eyed vireo, chat, orchard oriole, and other Carolinian birds are said to inhabit the 'eastern United States,' while, as a matter of fact, they are absent from the northern tier of States and New England, except in the southern parts. Other surprising statements may be traced to popular prejudice. Thus the author says of the Blue Jay: "Here is a bird against whom the hand of every lover of song-birds should be turned * * * for the Jay is a cannibal, not a whit less destructive than the crow. * * * Day by day they sally out of their nesting places to market for themselves and for their young, and nothing will do for them but fresh eggs and tender squabs from the nests of the song-birds; to be followed later by berries,

small fruit and grain." The same sweeping ignorance and prejudice characterizes her account of the crow, of which she says: "This is another bird that you may hunt from your woods, shoot (if you can) in the fields and destroy with poisoned grain. Here he has not a single good mark against his name. He is a cannibal, devouring both the eggs and young of insect-destroying song-birds." As a matter of fact, the eggs and young of wild birds and poultry together form less than one per cent. of the food of the crow, as determined by the examination of about a thousand stomachs in the U. S. Department of Agriculture. So with grain; sprouting corn forms only two per cent. of the entire food, most of the corn eaten by crows being waste grain picked up, chiefly in winter, in fields and other places where its consumption is no loss to the farmer. On the other hand, mice and other injurious mammals form $1\frac{1}{2}$ per cent. of the food of crows; and insects no less than $23\frac{1}{2}$ per cent.

The colored plates are execrable. Most of them are cheap, coarse, dauby caricatures, taken second-hand from Audubon, who would turn in his grave if he saw them. In addition to these, there are five uncolored process reproductions of water birds and birds of prey. The latter are from Dr. Fisher's *Hawks and Owls of the United States* (published by the U. S. Department of Agriculture) and, though poor, are by far the best illustrations in the book.

Excepting the plates, the book is neatly gotten up and well printed. A novel and useful feature is the insertion of the common name of the bird in heavy-face type at the top corner of the page, in the place usually occupied by the pagination.

On the whole, Mrs. Wright's '*Birdcraft*' may be recommended as a source of pleasure and assistance to the many lovers of nature who are trying to learn more about our common birds. C. H. M.

Anleitung zur Microchemischen Analyse: Von H. Behrens, Professor an der Polytechnischen Schule in Delft. Mit 92 Figuren im Text. Hamburg, Leopold Voss. 1895. 224 pp.

Professor Behrens first wrote this book in French, and it was published in 1893. An English translation by Professor Judd appeared soon after. That the author published a German edition so soon speaks for the value of the book. Professor Behrens' text-book is the only one, as indeed he is the chief authority, on this new and important subject. The first half of the book describes the reactions of the elements, giving plates of the crystalline precipitates as seen through the microscope. Part Second treats of the systematic analysis of water, rocks, ores, alloys, and compounds of the rare elements. The chapter on the micro-chemical examination of rocks, by study of slides and of powdered rock is very interesting; indeed, for petrographic research the manual is invaluable, but it is also of great value to the metallurgist in the study of ores and alloys, and to the general chemist in the ordinary run of chemical analysis. E. Renouf.

NOTES AND NEWS.

THE AMERICAN ASSOCIATION.

The preliminary announcement of the forty-fourth meeting of the American Association for the Advancement of Science, to be held in Springfield, Mass., August 28 to September 7, 1895, has now been issued. The arrangements promise an interesting and successful meeting.

The first general session will be held on the morning of Thursday the 29th. This will give Friday, Monday, Tuesday and Wednesday as the four days entirely devoted to the reading of papers in the sections. Saturday will be given to excursions in the vicinity of Springfield, and more dis-